

CHEM-NUCLEAR SYSTEMS INC.

P O Box 726 • Barnwell South Carolina 29812 • (803) 259-1781

STRAIGHT BILL OF LADING — SHORT FORM — ORIGINAL — NOT NEGOTIABLE.
RECEIVED, subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading

The property described below in apparent good order except as noted (contents and condition of contents of packages unknown) Marked consigned and destination as indicated below which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination If on its route otherwise to deliver to another carrier on the route to said destination It is mutually agreed as to each carrier of all or any of said property over all or any portion of said route to destination And as to each party at any time interested in all or any of said property that every service to be performed hereunder shall be subject to all the terms and conditions of the uniform domestic straight bill of lading set forth (1) in official Southern Western and Illinois Freight Classifications in effect on the date hereof if this is a rail or a rail water shipment Or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading including those on the back thereof set forth in the classification or tariff which governs the transportation of this shipment and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns

(MAIL OR STREET ADDRESS OF CONSIGNEE - FOR PURPOSES OF NOTIFICATION ONLY)

FROM S. HILL / PROJECT NALSIEN / VAC. **Date** 9/7/80

At St. Andrews SC

CONSIGNEE TO 11 1 20 1

DESTINATION	STATE	COUNTY
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Niagara Falls NY

Control Number
76-285

Tractor No 76

Trailer No 3472

LENGTH
Aspen

HEIGHT
Acme

WIDTH
Fecal

[illegible]

IMPORTANT - This is to certify that the above named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Signature

Company

Date _____

Received the property described above in good condition,
except as otherwise noted

Carrier

Driver

Date and Time

7/96 1730

SCHEDULED TO ARRIVE	DATE 9/19	TIME 0800 AM 1200 PM	COMPLETED LOADING	DATE 9-19-76	TIME 1200 PM	SHIPPER'S SIGNATURE Ronald L. Hamer
ARRIVED AT SHIPPER	DATE 9-19-76	TIME 830 AM PM	LEFT SHIPPER	DATE 9-19-76	TIME 130 PM	SHIPPER'S SIGNATURE Ronald L. Hamer

SHIPPER IMPORTANT NOTE Your signature certifies that the above dates and times are correct for record keeping and billing purposes

(1) GENERATOR NAME Umetco Minerals Corp.
ADDRESS 127 47th Street

CITY Niagara Falls STATE NY
CONTACT DT Hansen PHONE 716 296-4028
(2) consigned to
CHEM-NUCLEAR SYSTEMS, INC
PO BOX 726, OSBORN ROAD
BARNWELL, SC 29812

BARNWELL WASTE MANAGEMENT FACILITY

Operated by CHEM-NUCLEAR SYSTEMS, INC
P O Box 726, Barnwell, South Carolina 29812
(803) 259-1781

RADIOACTIVE SHIPMENT MANIFEST FORM

CARRIER CNST ADDRESS Barnwell, SC
TELEPHONE 803-259-1781 SHIPPING DATE 9-19-86
SHIPMENT TYPE Van SHIPMENT SURFACE EXPOSURE 5.2 mR/hr
CASK IDENTIFICATION NO USA/ N/A
SHIPMENT NO 86-28-25 LINER SERIAL NO N/A
DRIVER SIGNATURE M Northcraft DATE 9-19-86

(3) USE THIS NUMBER ON ALL CONTINUATION PAGES VOLUME ALLOCATION NO 09-86-254A PAGE 1 OF 3

(5) TOTAL FOR EACH CLASS		PROPER SHIPPING NAME & HAZARD CLASS (PER 49 CFR 172.101)	ID NUMBER
NO OF PACKAGES	WEIGHT (POUNDS)		
		Radioactive Material empty packages	UN2908
		Radioactive Material fissile n.o.s. Radioactive Material	UN2918
		Radioactive Material low specific activity n.o.s. Radioactive Material	UN2912
		Radioactive Material n.o.s. Radioactive Material	UN2982
		Radioactive Material limited quantity n.o.s. Radioactive Material	UN2910
		Radioactive Material special form n.o.s. Radioactive Material	UN2974
		Radioactive Material instruments and articles Radioactive Material	UN2911
		Other (Specify)	

(6) SHIPMENT TOTALS							(7) TOTAL SNM	
DISPOSAL VOLUME (Cubic Feet)	TOTAL NO OF PACKAGES	ACTIVITY (10CFR20.311) Millicuries					ISOTOPE GRAMS	
		ALL ISOTOPES	TRITIUM	C 14	Tc 99	1 129	SOURCE (Pounds)	
150	20	2.1401 NP	NP	NP	NP	NP	U-233	NP
							U-235	NP
							TOTAL	NP
(8) TOTAL PALLET VOLUME (CU FT) <u>26.5</u>							(9) MINIMUM % FILL FOR STABILIZATION PROCESS <u>N/A</u>	

(10) WASTE DESCRIPTION Ore, slag, and ferro alloys mixed in soil (11) PHYSICAL FORM/ SOLIDIFICATION AGENT Solid - 19 drums (12) CHEMICAL FORM AND NAME AND % OF CHELATING AGENT(S) OXIDE / 0% Chel. Agent (13) WASTE FORM CLASS U ☐ AU ☐ AS ☐ B ☐ C

(14) ☒ Yes () No THIS VEHICLE IS CONSIGNED EXCLUSIVE USE LOADING AND UNLOADING MUST BE ACCOMPLISHED BY CONSIGNOR OR CONSIGNEE OR HIS DESIGNATED AGENT

(15) IMPORTANT This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation

Signature Daniel J. Hansen
Company Umetco Minerals Corp.

Date 9/19/86

(16) Certification is hereby made to the South Carolina Department of Health and Environmental Control that this shipment of low-level radioactive waste has been inspected in accordance with the requirements of South Carolina Radioactive Material License No. 097 as amended, and the Nuclear Regulatory Commission's License No. 12-13536-01 as amended, and the effective Barnwell Site Disposal Criteria within 48 hours prior to shipment and further certification is made that the inspection revealed no items of non-compliance with all applicable laws, rules, and regulations.

Date 9/19/86 By Daniel J. Hansen
Title and Organization Consignor
Telephone No. (716) 296-4028

CNSI USE ONLY

- ☐ This material meets all license requirements
☐ This material was disposed of in accordance with license
☐ Discrepancy

CUSTOMER'S COPY

Form No CNS-201
(11-85)

SEE INSTRUCTIONS ON REVERSE SIDE
FOR FILLING OUT THIS FORM

Date _____
Authorized Signature _____ Title _____

Arrival Date _____ Arrival Survey No _____
Date/Time Buried _____ H P Initial _____
Trench No _____ Location Code _____
Waste Class Code _____
Trench No _____ Location Code _____
Waste Class Code _____
Personnel Exposure _____

UCCNHT0003267

CHEM-NUCLEAR SYSTEMS, INC

INSTRUCTIONS FOR COMPLETING RADIOACTIVE SHIPMENT MANIFEST FORM

NOTE SHIPMENT MAY BE REFUSED IF CONTENTS, SUPPORTING DOCUMENTATION AND PACKAGING REQUIREMENTS ARE NOT IN COMPLIANCE WITH CHEM-NUCLEAR SYSTEMS, INC'S STATE AND FEDERAL LICENSES, THE BARNWELL SITE CRITERIA AND APPLICABLE DOT AND NRC SHIPPING REGULATIONS

GENERATOR OR SHIPPER MUST PROVIDE (PRINTED OR TYPED) INFORMATION IN ALL NUMBERED AREAS ON THE RSM FORM USE OF N/A FOR "NOT APPLICABLE" IS AUTHORIZED

ITEM DESCRIPTION OF ITEMS

- 1 Indicate generator name (consignor), address, contact person, and phone number of person responsible for making shipment
- 2 Consignee If shipment is being made to some other facility and this form is being used, blot out this section and write in who the consignee is
- 3 Each shipment is assigned a volume allocation number by the Barnwell office. Write the number in this space and use this same number on all continuation pages used for each shipment. Number all pages in chronological order
- 4 List the carrier, address, telephone number, shipping date, shipment type (van, cask, etc.), shipment surface exposure (highest radiation exposure on the exterior of the van, cask, etc.), cask identification No. (example USA/6601/B), shipment number, liner serial number, driver's signature and date
- 5 Indicate the total number of containers and the total weight, in pounds, of each hazard class
- 6 Record the cumulative total of all hazard classes in these blocks. Check appropriate box for the units of activity measurements. If the stated radioisotopes listed in the four (4) columns are not present, record in the blocks as "not present" (N P). If the radioisotopes do exist, but are in quantities less than the lower limits of detection (LLD), the quantities of the nuclides must be recorded as being less than the minimum detectable. The minimum detectable amount must be included in parenthesis. Isotopes U-238, Th-232, or any other material which is source material must be recorded in source pounds
- 7 List weight, in grams, of special nuclear material
- 8 Record volume, in ft³, of all disposable pallets
- 9 Enter the minimum % fill of combined waste and stabilization process (i.e. the minimum % filled container). Disposal containers requiring stabilization media for Classes A Stable B or C must have a minimum fill of 85%. For other containers, enter N/A
- 10 SEE ITEM NO 23
- 11 SEE ITEM NO 21
- 12 SEE ITEM NO 22
- 13 SEE ITEM NO 24
- 14 Indicate if shipment is transported as exclusive use or not applicable. If "yes" is checked, instructions for maintenance of exclusive use vehicles must be provided by the shipper to the carrier
- 15 A company representative of the generator must sign the DOT certification. All signatures must be legible
- 16 A company representative of the generator must sign the S C DHEC certification. Title, organization and phone number must be indicated. The date must be within 48 hours of the shipping date as specified in block 4. Under no circumstances should the shipping date be prior to the certification date of block 16. All signatures must be legible
- 17 List each container separately. Item number (s) on the disposal container(s) must correspond with item number(s) listed on the RSM form
- 18 List the prominent radionuclides in each container. Use of MFP or MCP are not authorized. Use as many lines as necessary to describe the contents of the container. NOTE: If more than one container in the shipment contains the same activity distribution of each radionuclide, a listing of radionuclides is required for the first container only. Subsequent containers in this series will require a lone line entry with appropriate information on each. Use of the words, "See attached", is not an appropriate entry
- 19 Record the percent abundance of each radionuclide or the activity of each radionuclide in mCi, in each container (See #18 above)
- 20 Record the cumulative total of all isotopes in each container, in mCi
- 21 Record the physical form of the waste material. "Liquid" is not authorized
- 22 Record the chemical form of the waste material. NOTE: If material contains chelating agents in quantities greater than 0.1%, the names and weight percentage must be listed
- 23 Describe briefly what the waste is. If the material is solidified, indicate what solidification media is used. Example: Dewatered resin, solidified liquid in cement, solidified resin in cement, filters encapsulated in cement, building rubble, irradiated non-fuel bearing reactor components, contaminated trash (specify paper, plastic, scrap metal, wood, etc.)
- 24 List the classification of the waste package, either AU, AS, B, or C per 10 CFR 61.55 and 61.56
- 25 Weight, in grams, of the isotopes U-233 or U-235 or any other material which is special nuclear material
- 26 Weight, in pounds, of the isotopes U-238, Th-232, or any other material which is source material
- 27 Weight, in pounds, of each disposable container including its contents
- 28 Record the volume, in ft³, of the disposal container. Boxes with attached skids must include the skids in this volume. Drum pallets or spacers inside casks are not classified as radioactive waste
- 29 List each type of disposal container used, (Example: wooden box, steel box, 17H STC, HIC, FRP, etc.)
- 30 Record the highest measured radiation level for each disposal container surface. Package surface may be the same as disposal container if a cask is not used. Transport Index (TI) equals mR/hr at one (1) meter from accessible container(s)
- 31 Record the results of contamination surveys performed on the disposal containers. Do not use "BKG" for background levels unless the background level is indicated in this column.
- 32 If fissile radioactive material is being shipped, record the fissile class of the material as appropriate
- 33 Write in what kind of D O T labels or markings are used on each container. Such as: Radioactive W-1, Y-11 Y-111 or Radioactive-LSA

BARNWELL WASTE MANAGEMENT FACILITY

Operated by CHEM-NUCLEAR SYSTEMS, INC

USE THIS NUMBER ON
ALL CONTINUATION PAGESVOLUME ALLOCATION NO
09-86-254-AGENERATOR NAME UMETCO MINERALS CORP

CONTINUATION SHEET

PAGE 2 OF 3

(17) ITEM NO	(18) RADIO- NUCLIDE EACH CONTAINER	(19) PERCENT OF ACTIVITY OR mCi OF EACH NUCLIDE	(20) ACTIVITY EACH CONTAINER (mCi)	(21) PHYSICAL FORM	(22) CHEMICAL FORM AND NAME & % OF CHELATING AGENT	(23) WASTE DESCRIPTION	(24) WASTE FORM CLASS	(25) SPECIAL NUCLEAR MATERIAL (grams)	(26) SOURCE MATERIAL (pounds)	DISPOSAL CONTAINER						(32) FISSILE CLASS	(33) LABELS/ MARKINGS USED	
										(27) CONTAINER WEIGHT (pounds)	(28) CONTAINER VOLUME (Cu Ft)	(29) CONTAINER TYPE	(30) RADIATION LEVELS		(31) CONTAMINATION CONTAINER SURFACE (DPM / 100cm2) Alpha Beta Gamma			
													CONTAINER SURFACE mR/HR	(T1) 1 METER mR/HR				
1	²³⁸ U	3.71E-2	0.10160	SOLID	OXIDES /	MIXTURE OF SLAG AND SOIL	AU	NIP	0.245	640	7.5	55 GAL	4.2	N/A	<100	<1000	N/A	Radioactive— LSA
	²³² Th	6.89E-2	0.0959		0%				1.38			DRUM	<0.2					Radioactive—
2	²³⁸ U	3.36E-2	0.0959						0.222	620			<0.5					Radioactive— LSA
	²³² Th	6.23E-2							1.249									Radioactive—
3	²³⁸ U	3.21E-2	0.0917						0.212	595			<0.2					Radioactive— LSA
	²³² Th	5.46E-2							1.194									Radioactive—
4	²³⁸ U	3.71E-2	0.1060						0.245	680			<0.2					Radioactive— LSA
	²³² Th	6.54E-2							1.380									Radioactive—
5	²³⁸ U	3.77E-2	0.1076						0.250	690			<0.1					Radioactive— LSA
	²³² Th	6.70E-2							1.402									Radioactive—
6	²³⁸ U	3.77E-2	0.1076						0.250	690			<0.1					Radioactive— LSA
	²³² Th	6.70E-2							1.402									Radioactive—
7	²³⁸ U	3.99E-2	0.1110						0.257	710			<0.1					Radioactive— LSA
	²³² Th	7.21E-2							1.446									Radioactive—
8	²³⁸ U	3.95E-2	0.1127						0.261	720			<0.2					Radioactive— LSA
	²³² Th	7.32E-2							1.468									Radioactive—
9	²³⁸ U	2.77E-2	0.0790						0.183	520			<0.5					Radioactive— LSA
	²³² Th	5.14E-2							1.030									Radioactive—
10	²³⁸ U	3.06E-2	0.0875						0.202	570			<0.5					Radioactive— LSA
	²³² Th	5.68E-2							1.139									Radioactive—
11	²³⁸ U	3.18E-2	0.0908						0.210	590			<0.5					Radioactive— LSA
	²³² Th	5.90E-2							1.183									Radioactive—
12	²³⁸ U	2.98E-2	0.0849						0.196	555			<0.5					Radioactive— LSA
	²³² Th	5.52E-2							1.106									Radioactive—
13	²³⁸ U	4.60E-2	0.1312						0.303	830			<0.5					Radioactive— LSA
	²³² Th	8.53E-2							1.709									Radioactive—
14	²³⁸ U	4.15E-2	0.1186						0.274	755			<0.2					Radioactive— LSA
	²³² Th	7.71E-2							1.545									Radioactive—
15	²³⁸ U	4.15E-2	0.1186						0.274	755			<0.1					Radioactive— LSA
	²³² Th	7.71E-2							1.545									Radioactive—
15			15491															
PAGE TOTALS									NIP	23.762	9.960	112.5			N/A			

Form No CNS-201

(11-85)

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BARNWELL WASTE MANAGEMENT FACILITY
Operated by CHEM-NUCLEAR SYSTEMS, INC

GENERATOR NAME UMETCO MINERALS CORP

CONTINUATION SHEET

USE THIS NUMBER ON
ALL CONTINUATION PAGES

VOLUME ALLOCATION NO
09-86-754-A

PAGE 3 OF 3

(17) ITEM NO	(18) RADIO- NUCLIDE EACH CONTAINER	(19) PERCENT OF ACTIVITY OR mCi OF EACH NUCLIDE	(20) ACTIVITY EACH CONTAINER (mCi)	(21) PHYSICAL FORM	(22) CHEMICAL FORM AND NAME & % OF CHELATING AGENT	(23) WASTE DESCRIPTION	(24) WASTE FORM CLASS	(25) SPECIAL NUCLEAR MATERIAL (grams)	(26) SOURCE MATERIAL (pounds)	DISPOSAL CONTAINER						(32) FISSILE CLASS	(33) LABELS/ MARKINGS USED	
										(27) CONTAINER WEIGHT (pounds)	(28) CONTAINER VOLUME (Cu Ft.)	(29) CONTAINER TYPE	(30) RADIATION LEVELS		(31) CONTAMINATION CONTAINER SURFACE (DPM / 100cm2) Alpha Beta Gamma			
													CONTAINER SURFACE mR/HR R/HR	(T1) 1 METER mR/HR				
16	²³⁸ U	3.57E-2	0.1017	SOLID	OXIDES/ O _{9n}	MIXTURE OF SLAG AND SAIL	AU	NIP	0.735	655	7.5	55gal	<0.1	N/A	<100	<1000	N/A	Radioactive— LSA
	²³² Th	6.61E-2							1.37L			Drum						Radioactive—
17	²³⁸ U	3.57E-2	0.1017						0.735	655			<0.1					Radioactive— LSA
	²³² Th	6.61E-2							1.37L									Radioactive—
18	²³⁸ U	3.57E-2	0.1017						0.735	655			<0.2					Radioactive— LSA
	²³² Th	6.61E-2							1.37L									Radioactive—
19	²³⁸ U	3.36E-2	0.0959						0.737	620			<0.2					Radioactive— LSA
	²³² Th	6.23E-2							1.34G									Radioactive—
20	²³⁸ U	6.60E-2	0.19		FERRO-	FERRA			0.43L	1140			<0.1					Radioactive— LSA
	²³² Th	0.1225			ALLOYS	CEMENT / SOLIDIFIED BECAUSE			2.155									Radioactive—
						SAME SAMPLES WERE IN POWDER												Radioactive—
						FORM)												Radioactive—
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